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STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS, AND MINING  
1588 West North Temple  
Salt Lake City, Utah 84116  
(801) 533-5771

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M E M O R A N D U M  
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TO: The Board of Oil, Gas and Mining

FROM: D. Wayne Hedberg, Reclamation Hydrologist

SUBJECT: Luki Milling Corporation  
Tibbetts Placer Mine  
ACT/019/001  
Grand County, Utah

DATE: February 6, 1981

The Division staff has reviewed the Mining and Reclamation Plan submitted by Luki Milling Corporation for their Tibbetts Placer Mine in Grand County and feels that the plan meets the requirements of the Utah Mined Land Reclamation Act.

The Division seeks the Board's concurrence for issuing tentative approval so that publishing an abbreviated version of the plan may proceed. In addition, the Division seeks the Board's concurrence on the amount of reclamation surety and requests the Board's opinion on the form of surety to be requested from Luki Milling Corporation, also pending no adverse public comment, issuance of final approval. An Executive Summary and Bond Estimate is attached for your review.

DWH/te

E X E C U T I V E   S U M M A R Y  
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LUKI MILLING CORPORATION  
Tibbetts Placer Mine  
ACT/019/001  
Sections 28 and 29,  
Township 22 South, Range 24 East  
Grand County, Utah

February 6, 1981

COMMODITY:

The applicant proposes the development of a small placer gold mining operation in which historical Colorado River bank alluvial gravels and sands will be strip-mined and processed on site.

LOCATION:

The legal description of the proposed site is on State Mineral Lease #38305, Sections 28 and 29, Township 22 South, Range 24 East. The location is in Grand County, Utah, approximately 4.5 miles northeast of the Dewey Bridge off Utah Highway 128 and approximately 35 miles northeast of Moab, Utah. Refer to attached map.

GEOLOGY:

The site to be mined consists of Colorado River Quaternary alluvial deposits comprised chiefly of sands and gravels underlain by a Mancos Shale member. Approximate thickness of these surface deposits ranges between 15 and 20 feet.

SOILS:

Soils in this area tend to be sandy, rocky, poorly developed, and relatively shallow in extent, generally averaging less than 6 inches in depth. However, this growing medium does support a substantial vegetation community typical of river flood plain environments.

HYDROLOGY:

The Colorado River is immediately adjacent to the site of operations. A one hundred foot buffer strip has been established to insure protection of the immediate hydrologic system and prevent inundation of the milling operations. Ground water will be intercepted by the stripping activities due to the close proximity to the river channel and its high water table. There should be minimal impact provided the proper safeguards are followed to ensure that potential contaminants from the milling and processing operation are maintained.

Erosion potential is low to moderate due to the rather high infiltration rates, lack of relief and low precipitation (8 inches annually). The highest potential for erosion would be most applicable during high flow periods of the Colorado River during the spring.

Appropriate erosion control measures to protect the topsoil and wasterock stockpile area(s) will be implemented by the operator.

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ECOLOGY:

The total vegetative ground cover at the site is approximately 50 percent. Vegetation at the site is typical of the Colorado River riparian community, consisting of rabbitbrush, cottonwoods, tamarisk, willows and grasses. Dense brush cover is interspersed with sand bars. Typical large wildlife found in the area are beaver, fox, coyote, and mule deer. Many bird species utilize the riparian habitat at the site. In checking the literature, there is one proposed endangered plant species, listed for Grand County, which occurs in in this habitat type. This species, Gaillardia flava, (the yellow blanket flower), is found in the Mancos Shale formation, aluvial fan and river terraces and sandy gravels within Salix-Populus communities at elevations between 4,000 and 5,400 feet. This species has a wide distribution in Emery and Grand counties in Utah. It has been proposed endangered in the Federal Register, June 16, 1976, recommended as threatened by Welsh, 1978, and is listed under Taxa currently under review by the Department of Interior, December 15, 1980. Without a field survey at the site it is impossible to tell for certain if this species occurs at the proposed mine site. Since this species is only a proposed threatened species, which would be administered under Federal law, the State cannot require that a survey be performed at this time.

LAND-USE:

Present land use at the site consists of limited grazing by cattle and deer. The Division of State Lands does not have the land leased for grazing.

MINING AND RECLAMATION PLAN:

1. Trees and brush will be cut and piled. Stumps will be pulled with front end loader, and associated waste and debris stockpiled to be buried.
2. The top 4 to 6 inches of salvageable topsoil material will be removed, stockpiled and protected as the operation enters a new section. Approximately 6-7 acres are projected to be mineable in a years time.
3. The gravel and sand will be removed from a cleared 2 acre section initially with a front end loader from the surface down to an estimated depth of 15-20 feet. The stripped materials will be run through a feedhopper and washing and screening plant. Coarse material (1/4" plus) is rejected to waste pile for stockpiling and later reclamation. Fines are added batchwise to mixer for amalgamation. Following amalgamation, a concentrator separates light gangue material from heavy concentrates. Discharge water goes to settling pit to be recycled after settling.

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A sand and gravel lease has been applied for from the Division of State Lands in order to sell the magnetite black sands recoverable as a concentrate. The possibility exists that there may be a limited local market for use of a limited amount of washed gravels, but demand is low and more readily accessible sources are available.

4. As one area of the pit is worked out, it will be backfilled with reject material from the screening operation and reclaimed contemporaneously as a new area is disturbed.

5. Utah Highway 128 and the existing 1 mile of dirt road accessing the area will be used. Permission has been obtained from the land owner for use of this road. No additional roads will be constructed.

6. A small scale pilot survey will be performed prior to actual on site milling and processing of the alluvial materials to determine potential effects of milling wastewater on local ground water quality. This study will be necessary prior to State approval. All State standards and regulations shall be complied with and appropriate construction and design dams implemented to insure protection of the hydrologic regime.

7. Final reclamation will consist of backfilling, grading, topsoiling and revegetating of all areas, including pits, ponds, waste piles, roads, etc. Reseeding will be performed if initial attempt fails. All structures, equipment debris and trash will be disposed of and/or removed from the property as approved by the Division of Oil, Gas and Mining and State Health.

8. Luki Milling Corporation has committed to comply with Rule M-10, "Reclamation Standards" in its entirety.

IMPACTS:

Placer operation will intercept groundwater table associated with Colorado River as the flood plain sand and gravel is removed. Potential impact of water quality degradation may exist due to processing, amalgamation and wastewater reclaim techniques, but this shall be controlled if proper mining techniques and appropriate safeguards are maintained throughout the mining sequence.

Temporary displacement of some wildlife species presently utilizing the area will result. It is anticipated that revegetation of the area should be successful due to the nature of the current condition of the characteristic riparian vegetation. In addition to the revegetation plan to be implemented, the 100 ft. buffer strip of native vegetation, to be left undisturbed, should act as a viable natural seed source to supplement revegetation efforts.

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SURETY ESTIMATES:

Surety for this operation was estimated to be \$40,550.00. This surety estimate is based upon a contemporaneous reclamation schedule of backfilling, regrading, and topsoiling of the mined out areas. There shall be no more than 1 acre of excavated surface area left unreclaimed at any particular point of time. This is in addition to the initial 2 acre surface disturbance required during the primary construction phase for the location of the processing facilities, stockpile areas, settling ponds, and other ancillary structures as outlined in the mine plan. Any alteration of this proposed mining and reclamation procedure will require a corresponding adjustment in the surety bond amount. A 13% inflation factor for the anticipated mine life of 6 years brings the total to \$84,423.00. Luki Milling Corporation has not proposed a form of bond as of this date and would request the Board's recommendations or preference. (See attached surety estimate).



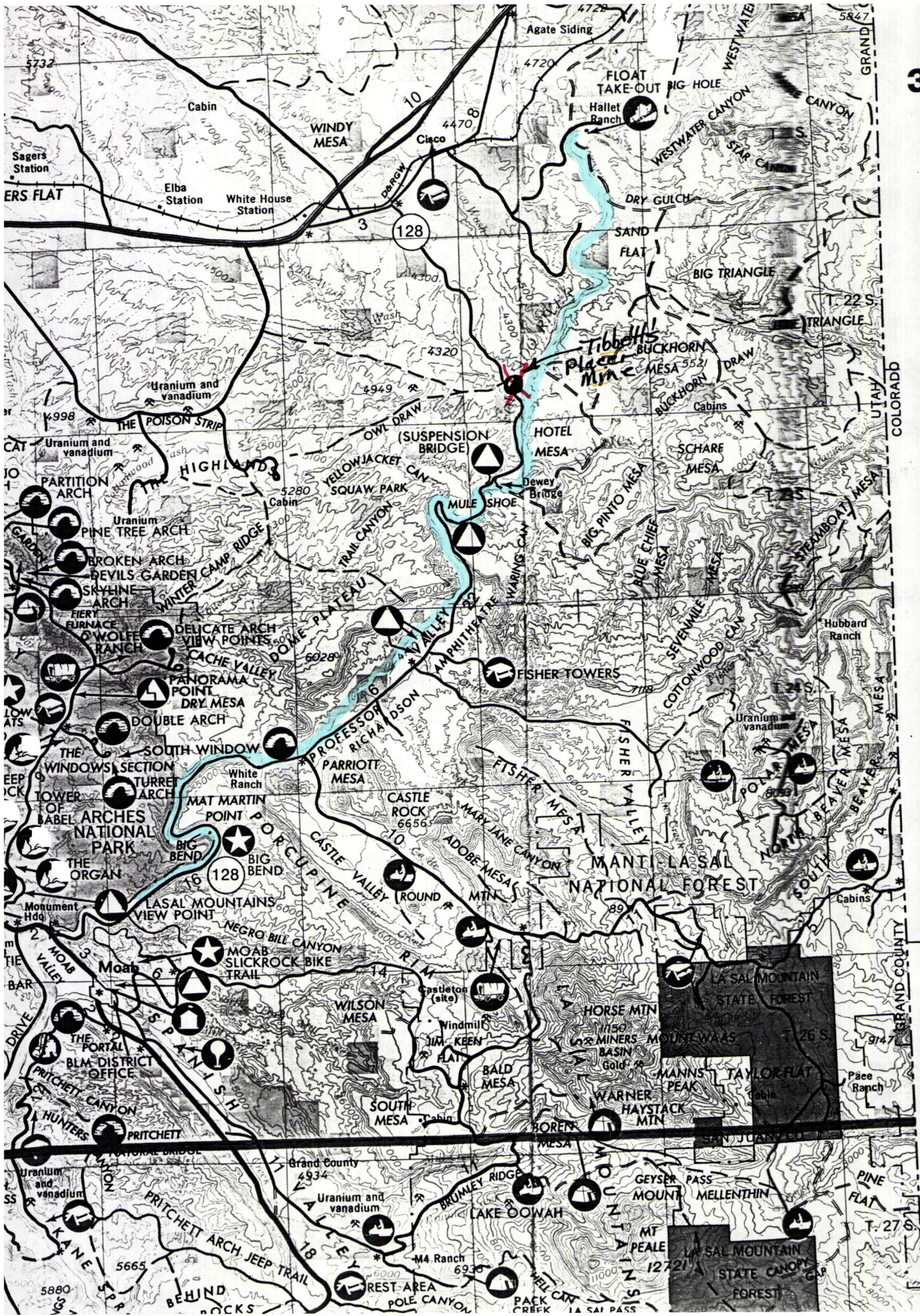
# DIVISION OF OIL, GAS, AND MINING

## BOND ESTIMATE

OPERATOR: Luki Milling Corporation  
 MINE NAME: Tibbetts Placer Mine  
 LOCATION: Sections 28 & 29, T. 22S., R. 24E.  
 COUNTY: Grand  
 DATE: February 6, 1981

	Operation	Amount	Rate	Cost
A.	CLEAN-UP			
	1. Removal of structures & equipment.		Lump sum	\$ 1,500.00
	2. Removal of trash & debris.			
	3. Leveling of ancillary facilities pads and access roads.			
B.	REGRADEING & RECONTOURING			
	1. Earthwork including haulage and grading of spoils, waste and overburden.	20,300 23,000yd <sup>3</sup> @ 2700 yd <sup>3</sup> @ 1 acre (assuming contemporaneous reclamation)	1.10/yd <sup>3</sup>	18,270 \$25,300.00
	2. Recontouring of highwalls and excavations.	N/A	0.90/yd <sup>3</sup>	20,700
	3. Spreading of soil or surficial materials.	4,000yd <sup>3</sup> @ 6 acres (4" average depth)	0.60/yd <sup>3</sup>	4,900.00
C.	STABILIZATION			
	1. Soil preparation, scarification, fertilization, etc.	40 acres 6 acres	\$25.00/ac 350	\$ 1,000.00 2,100.00
	2. Seeding or planting.	40 acres 6 acres	\$150./acre 300	\$ 6,000.00 1,800.00
	3. Construction of terraces, waterbars, etc.	N/A		
D.	LABOR			
	1. Supervision.	50 hours	\$10.00/hour	\$ 500.00
	2. Labor exclusive of bulldozer time.	N/A (included in B and C above)		
E.	SAFETY			
	1. Erection of fences, portal coverings, etc.	N/A		
	2. Removal or neutralization of explosive or hazardous materials.	N/A		
F.	MONITORING			
	1. Continuing or periodic monitoring, sampling & testing deemed necessary.	4 inspections	\$50.00 ea.	200.00 250.00
			Subtotal	26,270.00
G.	OTHER			
	1. 13% inflation factor for 6 years			31,052 \$43,873.00
			TOTAL	59,752 \$84,423.00





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